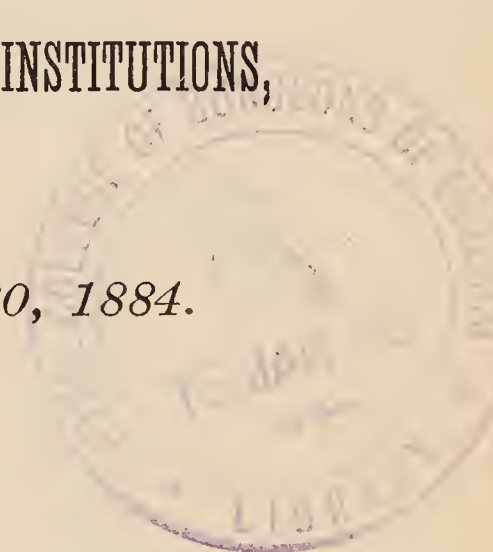


THE FORTY-FIFTH ANNUAL REPORT
OF THE
SUPERINTENDENT
OF THE
BOSTON LUNATIC HOSPITAL,

TO THE
BOARD OF DIRECTORS FOR PUBLIC INSTITUTIONS,

For the Year ending April 30, 1884.



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99

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THEODORE W. FISHER, M.D.	.	.	.	Superintendent.
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ISABELLA NICHOLSON	.	.	.	Female Supervisor.
JESSIE MUNSIE	.	.	.	Seamstress.
ABBY SHATTUCK	.	.	.	Laundress.
MARY CHISHOLM	.	.	.	Hospital Cook.
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REPORT OF THE SUPERINTENDENT OF THE LUNATIC HOSPITAL.

To the Board of Directors for Public Institutions : —

GENTLEMEN, — I beg leave to present for your consideration the forty-fifth annual report of the Boston Lunatic Hospital. I think it can truly be said that in no year since its construction has it been so well fitted to do good work, and in no year have more satisfactory results been accomplished. The processes of improvement, alteration, and renovation having been completed during the past summer, we have settled down to the regular work of a well-equipped hospital for the insane. The middle and lower wards on each side and the male stair-ways, since the last report, have been replastered and painted, and the wards furnished with substantial ash settees, hair-cloth sofas and lounges, centre-tables, and bookcases. Many rooms have been painted and carpeted, and twenty-six ash chamber sets provided for the upper wards and attendants' rooms. The ventilation of all the wards is much improved ; the new steam-heating apparatus works well, and our gas-supply is abundant and good.

Of the new dining-rooms it is hard to say enough in commendation. The relief afforded in the matter of serving food is very great. Every seat at table is constantly occupied, nine-tenths of the patients taking their meals there. The other tenth is made up of sick and excited patients who could not properly join the others at the table under any circumstances. The diet, as well as the manner of serving, has been improved. Good order and social feeling are

promoted by the present method of dining. Patients do not so soon forget the proprieties of life when obliged to observe them daily at table. These and the other changes mentioned have added greatly to the cheerfulness of our wards and the comfort and health of their inmates.

The following table will show the changes in the hospital population the past year. It will be seen that the number of persons and cases is nearly identical, differing only by one. The usual form has been expanded to receive the number of emergency and voluntary cases admitted, the emergency cases transferred without treatment, and the percentage of recoveries : —

1. GENERAL STATISTICS OF THE YEAR.

	Males.	Females.	Total.
Patients in hospital April 30, 1883.....	89	99	188
Admissions within the year	68	53	121
Emergency cases	30	17	47
Voluntary cases	10	4	14
Committed	28	32	60
Whole number of cases.....	157	152	309
Discharged within the year.....	64	51	115
Transferred within five days	20	15	35
Recovered	16	18	34
Much improved.....	5	.....	5
Improved	5	2	7
Unimproved.....	1	1	2
Deaths	17	15	32
Patients remaining April 30, 1884	93	101	194
Supported as city patients	88	89	177
“ private patients	5	12	17
Number of different persons.....	156	152	308
“ admitted.....	67	53	120
“ recovered.....	15	18	33
Daily average number.....	96	100	196
Percentage of recoveries.....	33.33	47.36	39.53

It will be seen that our average number has risen from 189 last year to 196 this year. The last five months it has remained steadily at our maximum limit of accommodation, 200. Although the pressure is constant and strong to exceed this number, it is hoped this limit will not be passed. The health, safety, and chances of recovery for our patients demand this, as well as our insufficient means of classification. Every bed on each side is full, and forty patients sleep in attic dormitories. How we can possibly accommodate the numerous emergency cases sure to be thrust upon us the coming year is a problem to be solved.

Of the 121 admissions 47 were emergency cases, 35 of which were transferred to other hospitals or removed by friends, the remainder being committed here. The last report of the Board of Health, Lunacy, and Charity states that this hospital receives ten times as many emergency cases as any other hospital in the State. I am unable, however, to find in that report, or in any State hospital report of the current year, the number of emergency cases admitted. The reception of this class of cases is, therefore, a special function of this hospital which should be duly recognized. Many of our emergency cases are State charges, for the temporary care of which the city receives no remuneration. They are all treated for a few days at the worst stage of their disease when so excited as to be especially dangerous to the public. They are received without notice, at any time of day or night, often on Sundays or holidays. They disturb the hospital more than ordinary cases, and the inquiries of relatives and friends, with the recording of histories and examinations, entail work for which we are not recompensed by the possibility of adding them to our number of recoveries. They belong among the admissions of the hospitals to which they are transferred, and tend to increase their percentage of recoveries; therefore they should not be allowed to diminish ours. They do not belong even in our whole number under treat-

ment, because they do not really come under treatment, and a single admission of the ordinary kind would exceed in duration of residence the whole of them together. We are glad to be able to render the public so important a service, but it should not be forgotten that it is all in excess of the usual work of a hospital for the insane.

The report of the Board above-mentioned says that 83 voluntary cases had been admitted to all the hospitals in the State since the passage of the law of 1881. Of these, 51 were admitted during the calendar year of 1883; and 34 of them were at the McLean Asylum. The law only allows the admission on his own application of a person "whose mental condition is not such as to render it legal to grant a certificate of insanity in his case." Strictly construed this would exclude all insane persons from the benefit of the law, and it puts the responsibility of determining the question of sanity or insanity upon the superintendent, who is by law excluded from signing a certificate of insanity. It is a question whether the term "boarder," in the section of the statutes under consideration is equivalent to "private patient;" if so, its operation would be confined almost entirely to private hospitals.

We have conformed very nearly to the provisions of the law, and have admitted 14 voluntary cases the past year. This number could have been increased if such admissions had been encouraged. They are all classified as insane, and, from a medical point of view, most of them were so. Of Dr. Cowle's 34 cases 3 were not classified as insane, and 11 recovered. Of the 31 insane cases 11 had been in the asylum previously. The form of disease was in most cases mild melancholia, or suicidal impulse without delusions. Dr. Cowle's remarks on the good moral effect of voluntary cases on other patients, upon nurses, and upon the relatives of patients, are very interesting, and satisfactory. His opinion is confirmed by our more limited experience here. I find that a patient who knows he can go when he pleases is more easily

persuaded that it is best for him to remain than is the case with those patients whose detention is compulsory. Both the patient and his friends are more inclined to reasonable views when argument is substituted for legal restraint. Of our 14 cases 4 had been in the hospital previously; 6 were inebriates, a class the framers of the law probably had in mind; 6 were discharged, 1 unimproved, and 5 apparently well. One of our first voluntary patients has remained contentedly in the hospital for two years.

Of the 86 admissions which remained under treatment here 44 were evidently incurable, and 42 appeared to have some chance of recovery. The recoveries the past year have been 39.5 per cent. of the admissions, — a slight increase over last year, and larger than any other hospital in the State. The average percentage of recoveries in the four State hospitals was about 20, and at the McLean Asylum 34. This satisfactory result is not due, I think, to any process of selection of cases, either conscious or natural. Of the 37 emergency cases transferred 25 were curable and 12 incurable. Of the 11 emergency cases retained, 6 were curable and 5 incurable. In the four State hospitals the percentage of cases admitted for the first time to any hospital was 72, at the McLean 70, at the Boston Lunatic Hospital 73. The percentage of cases in which insanity had existed less than one year was 47 for the four State hospitals, 70 for the McLean Asylum, and 67 for the Boston Lunatic Hospital.

I am still at a loss to understand the great difference in the recovery-rate between the hospitals of all grades in England and Wales and our own State hospitals. The percentage is calculated on the admissions in the usual way and shows that twice as many patients are returned to the community apparently well in the former case as in the latter. It is no explanation to assert that the recoveries reported from England and Wales for the last ten years, by the Commissioners of Lunacy, are not permanent. The question is

why do 40 per cent. of the admissions *appear* to recover in one case and only 20 per cent. in the other? The recovery-rate in the small private hospitals of the State has been 38 per cent. ; at the Government Hospital, at Washington, 35 ; at Trenton, 37 ; at the Butler Hospital, Providence, for the last 35 years, 33 ; at the Bloomingdale Asylum, New York, for the last 62 years, 41 per cent. A superintendent has no right to discount the future in his estimate of recoveries. He cannot assume that certain patients will relapse, and therefore refuse to call them recovered. And yet it is no doubt the "personal equation" which determines the wide difference between the recovery-rates of different hospitals. A knowledge of the tendency to recurrence, lately demonstrated by the researches of Drs. Earle and Parks in this State, seems to have become reflected in the recovery-rate of our State hospitals.

Recovery and recurrence are two different questions, and it is impossible to predetermine the permanency of they early recoveries, in an annual report. Every discharged patient in whom no trace of insanity can be found must be reported as recovered. The statistics now being published by the Board of Health, Lunacy, and Charity will, in a few years, show what percentage of first admissions, second admissions, etc., eventually recover. It does not, however, seem to me the best way to calculate the recovery-rate on the whole number under treatment, even provisionally, for the reason that admissions in a new hospital, or in one that enlarges its accommodations regularly, might remain uniformly the same, while the residuum of incurables steadily increased. As the recoveries depend almost entirely on the number of recent cases admitted, the number of recoveries might remain the same while the recovery-rate constantly decreased. The last report of that Board gives the following percentages reckoned on the whole number, not eliminating the transferred cases at this hospital : For the four State hospitals, for cases of all

kinds, $6\frac{1}{2}$ per cent. ; for the McLean Asylum, $11\frac{1}{4}$ per cent. ; for the Boston Lunatic, $11\frac{1}{3}$ per cent. ; or $12\frac{2}{3}$ per cent. omitting the transfers.

Although our recovery-rate may be kept up another year, it is certain the actual number of recoveries must greatly diminish. The hospital being full to its utmost capacity, admissions will become fewer and fewer, until no vacancies will occur, except by death. To show how quickly a hospital becomes choked with incurables a simple calculation will suffice. Suppose a new hospital of ample size to receive 100 patients annually, of which 20 per cent. recover, and 10 per cent. on the whole number die, each year. At the end of five years just one in twenty of its inmates will be curable. This shows the necessity of removing at regular intervals a certain number of chronic patients, if a hospital is to be kept open for the reception of acute cases. Every hospital must keep up a free movement of cases out as well as in, or it will soon become choked with incurables, and experience shows that death and recovery are not alone sufficient to prevent this result.

The State has four hospitals suited to the care of recent cases, and two for the chronic insane. A healthy circulation is kept up in the former by transfers to the latter, or would be if the accommodation kept pace with the increase of insanity. Another hospital for chronic cases is under consideration by a legislative committee. It is proposed to remodel the old buildings of the Boys' Farm School, at Westboro', for that purpose. Another proposed method of relief allows cities, above 50,000 in population, to establish asylums for persons who have been insane six months or more. This provision should be made compulsory to have any effect, as cities would not care to take their chronic insane unless they could care for them at a cheaper rate than the State hospitals, and this should not be allowed. The limit of six months should be changed to eighteen months or two years, as

many cases are curable after a year's duration. Another, and on the whole the best method of relief open to State hospitals, is the building of detached wards, of simple construction, for incurables. We have about one patient in ten having some chance of recovery, and some method should be at once devised for enlarging our accommodations or removing some of our incurables.

Our death-rate is about the same as last year, being 10 per cent. of the whole number under treatment. This is higher than the average for other hospitals in the State. There were eleven deaths of persons over 60 years of age. The causes of death are shown in Table XVIII. But 6 of the deaths were from curable diseases, and these were intercurrent with hopeless forms of insanity. Two unusual forms of disease have occurred, one an aneurism of the aorta, and one a tumor of the brain. The latter case was one of uncommon interest, and will be reported at the Superintendents' meeting at Philadelphia. The autopsies, the past year, have numbered 13, and have been carefully made and recorded by Dr. Gannett. They are presented for the benefit of the profession, together with his report in an appendix. They have certainly proved very instructive to the hospital staff, and the knowledge thus gained by a study of the dead is sure to be reflected in the treatment and care of the living. We have just completed a mortuary or temporary resting-place for the dead, consisting of two rooms in the male basement, fitted with all necessary conveniencies. Eight funerals were conducted in the female reception-room, the past year, by our chaplain and other clergymen.

In accordance with the arrangement mentioned in my last report, Dr. Folsom has held a clinic here every Saturday afternoon, for two terms of twelve weeks each. The two terms came in one hospital year by a chance which will not probably occur again. The preferable time for the clinic here is the first quarter of the year, while the second quarter,

on account of the weather, is more favorable for the clinic at Danvers. As the clinics require some time and thought in their prearrangement and management on the part of the hospital staff, it is desirable to hold them in the winter, when the pressure of hospital work is least urgent. The number of students attending has been limited to six, so as not to disturb the wards by the intrusion of too large a company. Cases illustrating some particular form of mental disease have been selected for study each week, and, so far, no objection has been made or offence taken by any patient. When possible, single patients have been brought to the reception-room for an interview after a clinical lecture, and the reading of the records of the case. Sometimes the patient is visited in his ward. No patients are examined to whom the process would be in the least degree objectionable, and in some cases the patient enters cheerfully into the attempt to arrive at a better understanding of his disease. The clinics have proved instructive to the students, and tend to increase the diligence of the hospital staff in observing and recording symptoms and in making an exact diagnosis in every case.

It also became possible for the first time this year to accommodate an interne, by removing the library from the room connected with the chapel, and fitting it up as a chamber. It is expected that in the future the interne will be an under-graduate, but this year we were fortunate in securing for six months the voluntary services of Dr. Philip C. Knapp, Jr., a recent graduate, and for eighteen months interne at the City Hospital. It is intended by this additional assistance to make a thorough physical examination of every case admitted, and more complete records of its progress than would otherwise be possible. The interne also does his share of the routine work of the hospital. He thereby acquires a practical knowledge of insanity, which will benefit the public in his future practice, while the hospital

will have had in training a number of under-graduates from which assistants may be selected with some knowledge of their fitness.

Fewer changes of attendants have occurred the past year than formerly, and service of a somewhat better grade has been secured on the male side. This has been largely due to increased interest in the renovated hospital and the greater facilities for carrying on the work of the wards. Last fall the female attendants were provided with a neat and appropriate costume, consisting of cap and apron, such as are worn by the nurses at the City Hospital. This has led to a greater desire to excel, and to a wholesome pride in their profession as nurses, and not mere custodians of the insane. The costume is also attractive and pleasing alike to patients and visitors. No uniform has been adopted for the male attendants, for fear that they would be made to look less like nurses and more like prison-officials. I have thought that some badge might properly be worn to distinguish the male attendants from patients; the red cross of Geneva, for instance, which was adopted by the Anglo-American Ambulance Corps during the Franco-Prussian war.

We have not yet found time to attempt lectures or lessons for attendants, or to send any of them to the training-school at the City Hospital, nor have we employed any trained nurses. As we suggested in a former report, a training-school for attendants in common with one of the State hospitals, where the numbers of both patients and attendants are large, would soon benefit, by an interchange of pupils and attendants, all the hospitals in the State. It may be possible another year to attempt some systematic instruction of our own attendants, by weekly lessons on various subjects pertaining to the nursing of the sick and the management of the insane.

Trial visits have been continued as formerly, the number of patients sent out on trial this year being 27, of which five

were obliged to return and 22 were discharged. Home visits, of long or short duration, have been allowed quite frequently, no special record having been kept of them. One lady, for many years resident here, has spent three-fourths of the time away from the hospital, in visits of one or two weeks' duration, to take care of an aged relative. It is hoped she may become so accustomed to life outside as to enable her to remain away altogether. A young man, for ten years a resident here, has been allowed time outside to learn and practise the art of lithography, and has at last been discharged. Visits to patients, as in former years, have been allowed weekly from the first, without regard to the form of insanity or severity of the case, and without bad results.

But one elopement has occurred, and no suicide. One general paralytic pushed over another general paralytic, causing fracture at the hip-joint. One patient, out on trial after six months' hospital residence, committed suicide. In the hospital he had for months been cheerful and industrious, and was anxious to go to work outside. His employer agreed to watch him very carefully, and he agreed to return at the first sign of head trouble. All precautions were without avail, however, when his depression returned. We have been free from serious epidemics, though one case of scarlet fever occurred in the Superintendent's family. Dysentery and diarrhoea prevailed extensively for a short time in July, caused by a sudden change of weather. Our sewers are thoroughly flushed once a month, but the plumbing in our water-closets might be improved.

The restraint of the camisole, which alone is used here, was required in less than two per cent. of the cases, and the amount of seclusion was about the same. We have not burned our crib-beds, straps, muffs, wristlets, and other severe forms of restraint, as has recently been done at the West, because for twenty years none have been used here. No bars or screens have been put on the new dining-room and

rear entry windows as yet, and it is a question whether they should be provided or not.

The annual appropriation of \$60,000 was all expended last year, \$5,000 or more of it for extraordinary alterations and repairs. Our expenses were diminished somewhat by the lower price of certain supplies, while more coal was burned than will usually be required, on account of the long and severe winter. Among other special purchases were a pair of horses for the wagonette, a mangle for the laundry, and new furniture for the chapel, offices, and wards. The net cost for each patient per week was \$5.34 against \$5.69 the year previous.

The same amount was asked for this year, in order to make certain long-needed improvements outside the hospital proper. Having cleared the grounds of several old wooden buildings, including the piggery and a disused and dilapidated bowling-alley, it is intended to build a suitable carriage-house in connection with the present stable. Carriages now have to be washed, and horses harnessed out-of-doors in all weathers, for want of room on the stable floor, and half our vehicles stand exposed the year round in an open wooden shed. The arches, arbors, and other ornamental structures in our garden and grounds, are falling in pieces from age, and need replacing with some more modern summer-houses or pavilions, as resting-places for the patients during their hours of exercise. Two kiosks or pagodas, opposite the two lawn-tennis courts, should be constructed to replace the worn-out tents of no use in showery or windy weather. A portico or *porte cochère*, in place of the awning now in use, would be an ornamental as well as useful addition to the front entrance of the hospital, allowing patients and others constantly arriving to alight from their carriages under cover in stormy weather.

Besides the mortuary now nearly completed, work is in progress on the brick floors of the kitchen and laundry. A brick partition wall and floor in the centre basement have

been rebuilt recently on account of the caving in of an old sewer and an ancient well. The front fence has been made solid by means of battens on the inside, the patients having been often annoyed by men or boys who stared through the palings at them. It was impossible to secure suitable privacy, especially for our female patients, without closing the fence, as our grounds are small and the path on that side within a few feet of it. The horse-sheds at the gate-house are about to be made more presentable by means of sliding doors in front. These and other changes will require the same appropriation as last year, for extraordinary alterations and repairs.

It is, I think, very desirable that a watch-clock should be procured such as is in use in most large public institutions. We cannot be absolutely certain of the perfect fidelity of our night-watches at all times in any other way. It should have stations in each ward and the attic dormitories for the in-door night-watches, and in the basement, stable, cottage, boiler-room and greenhouse, for the out-door night-watch. Two harbor thieves were recently chased out of our grounds by the watchman. The burning of Mr. Loring's foundry and ship-houses, during the winter, awakened new apprehensions for our own safety. At the suggestion of President Whiting, Chief Engineer Green and District Engineer Abbott made a thorough inspection of our premises and our precautions against fire. These consist of fire-escapes, iron stair-ways, fire-extinguishers, fire-buckets, a Bangor ladder, Lowry hydrant and hose, and a special fire-alarm box at the House of Correction gate, of which we have a key. Written instructions to attendants in case of fire have been posted, and a door cut in the billiard-room, which gives the occupants of the Cottage a second way of escape in case of fire. An additional hydrant in the rear, and an iron ladder on the rear of the Cottage, would still farther increase our safety.

The usual efforts have been made to entertain and occupy

our patients the past year, and thereby divert their minds from the sadness and monotony of forced seclusion from the world. In summer, when garden-work is in progress, it is not difficult to keep all our workers healthfully employed; in winter it is not so easy. We have no room for the simplest kind of in-door work, such as brush-making, which has been successfully introduced in other hospitals. A two-story brick wing, on the site of the present wood-shed, would be useful for this purpose and for storage, though the number of workers out of a population of two hundred would be small. If our numbers could be increased to two hundred and fifty, by means of detached wards for excited patients, we should gain in many ways. We should have increased facilities for proper classification. We could spare the space in our dark corridors for alcove rooms and bay-windows, and we should have enough workers to warrant attempting some kind of regular employment.

Our amusements have varied with the season. In the spring the circus has never failed to give great pleasure to our patients, many of whom are but "children of a larger growth." By the kind invitation of Mr. Forepaugh, we had as many passes as could be used to his show, and Mr. F. L. Perley invited us to his Park Square Circus. In the summer three harbor excursions were made, the Board kindly allowing us the use of the steamer "J. Putnam Bradlee" for this purpose. Water excursions by insane patients are peculiar to this hospital, as far as I know, and they are certainly very pleasant and profitable to all concerned. At least half our patients are able to participate in them, and they are usually accompanied by their friends and other invited guests. We owe Capt. Bartlett our thanks for his efforts to make these excursions as safe, varied, and agreeable for us as possible.

In the fall visits were made to the New England Fair and the Foreign Fair, to which passes were obtained of the management, through the kind efforts of President Whiting,

to whom we owe our warmest thanks for his presence and assistance on these and many other occasions. In the winter dancing-parties, musical entertainments, concerts, theatre-parties, and sleigh-riding, helped to divert us during the long and gloomy winter. All the holidays were suitably celebrated during the day or evening. The New Year's Party and the Annual Reunion of former patients on Washington's birthday were specially successful. We are indebted to Messrs. Plaisted, Rowell, Paladini, Norton, Andrews, Peck, Mitchell, Treadwell, Clark, Lappen, Smith, Kelly, Mrs. Orcutt, Mrs. Warring, the Misses Goodrich, Richardson, Nichols, Meins, Peck, Parker, and many others, for assistance at our musical entertainments.

We are also indebted again to Mr. Prang for a generous supply of Christmas cards and chromos; to Mrs. Horatio Bigelow for magazines and foreign periodicals; to Mr. C. F. Adams ("Yawcob Strauss") for exchanges; and to the publishers of the "Zion's Herald" for their paper.

Rev. Jonas B. Clark was elected chaplain during the fall, and has continued to officiate regularly and acceptably to our somewhat critical household. Rev. Joseph H. Clinch, after faithfully serving the hospital for twenty-four years, was obliged to resign on account of ill-health. We are glad to learn of his partial recovery, and of his fair prospects for a long period of comparative comfort and usefulness. His term of service has only been exceeded by that of two persons in the employ of the hospital. Miss Jessie Munsie completes her twenty-ninth year, as seamstress, in October. Mrs. Osborn has been our organist for twenty-eight years, and has shown a constant interest in the patients, and a willingness to assist in providing music for our parties. Long service usually implies faithful and devoted service, as it does in the cases mentioned.

Drs. Boland and Metcalf have discharged the varied duties of first and second assistants with skill, promptness, and

fidelity. No one who has not experienced them can be fully aware of the constant demands on the time of the medical staff of an insane hospital. Scarcely ten minutes from early morning till late at night are free from interruption. Consecutive thought and undisturbed reading are impossible. Every question, whether trivial or grave, must be decided at once and correctly. In no kind of service is experience more valuable, and no matter what its length, a conscientious physician will find something new to learn. The temperament that avoids routine, and the mind which exhibits a capacity and willingness to receive and act upon new ideas, in fact, the life-long student, not only of insanity but of insane men and women, will succeed best in the management of the insane.

Thanking the Board for its unfailing support and interest in the hospital and its future, this report is respectfully submitted.

THEODORE W. FISHER,
Superintendent.

TABLES
FOR
UNIFORM STATISTICS
IN THE
MASSACHUSETTS HOSPITALS AND ASYLUMS
FOR THE INSANE.

Approved by the Board of Health, Lunacy, and Charity, April 3, 1880.

1. GENERAL STATISTICS OF THE YEAR.

	Males.	Females.	Total.
Patients in hospital April 30, 1883.....	89	99	188
Admissions within the year	68	53	121
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“ admitted.....	67	53	120
“ recovered.....	15	18	33
Daily average number.....	96	100	196
Percentage of recoveries.....	33.33	47.36	39.53

2. MONTHLY ADMISSIONS, DISCHARGES, AND AVERAGES.

MONTHS.	ADMISSIONS.			DISCHARGES (INCLUDING DEATHS).			DAILY AVERAGE OF PATIENTS IN THE HOUSE.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
May, 1883	7	3	10	4	2	6	91.80	99.20	191.00
June	6	7	13	6	8	14	91.00	100.5	191.50
July	10	4	14	6	4	10	93.00	99.00	192.00
August	8	8	16	10	5	16	94.40	100.20	194.60
September	5	4	9	10	8	18	92.50	99.50	192.00
October	4	7	11	2	4	6	89.75	101.00	190.75
November	9	5	14	3	7	10	95.60	100.6	196.20
December	6	4	10	2	2	4	98.75	100.25	199.00
January, 1884.....	5	4	9	7	4	11	98.80	100.60	199.40
February	4	2	6	5	2	7	99.75	101.25	201.00
March.....	4	2	6	3	4	7	99.75	99.75	199.50
April	0	3	3	6	1	7	95.50	100.25	195.75
Total of cases.....	68	53	121	64	51	115	.....	.....	.....
Annual average .....	.....	.....	.....	.....	.....	.....	95.05	100.17	195.22

3. ¹RECEIVED ON FIRST AND SUBSEQUENT ADMISSIONS.

NUMBER OF THE ADMISSION.	CASES ADMITTED.			TIME PREVIOUSLY RECOVERED.		
	Males.	Females.	Total.	Males.	Females.	Total.
First	63	47	110	.....	.....
Second	5	4	9	5	3	8
Third .....	.....	1	1	.....	2	2
Twelfth.....	.....	1	1	.....	11	11
Total of cases.....	68	53	121	5	16	21
Total of persons.....	67	53	120	5	5	10

¹To this Hospital.

4. AGES OF PERSONS ADMITTED FOR THE FIRST TIME.

AGES.	AT FIRST ATTACK OF INSANITY.			WHEN ADMITTED.		
	Males.	Females.	Total.	Males.	Females.	Total.
Congenital	2	.....	2	.....	.....
Fifteen years and less		1	1	.....	.....
From 15 to 20 years.	4	4	8	3	3	6
20 to 25.....	8	2	10	9	5	14
25 to 30.....	7	10	17	6	10	16
30 to 35.....	8	3	11	7	2	9
35 to 40.....	8	6	14	9	5	14
40 to 50.....	9	8	17	9	9	18
50 to 60.....	9	4	13	10	6	16
60 to 70.....	1	5	6	4	4	8
70 to 80.....	3	1	4	4	2	6
Over 80 years.....	1	1	2	1	1	2
Unknown	2	2	4	.....	.....	.....
Total	62	47	109	62	47	109

5. PARENTAGE OF PERSONS ADMITTED.

PLACES.	MALES.		FEMALES.		TOTAL.	
	Father.	Mother.	Father.	Mother.	Father.	Mother.
Maine .....	.....	.....	6	6	6	6
New Hampshire ...	1	1	1	1	2	2
Vermont.....	1	1	.....	.....	1	1
Massachusetts.....	20	20	14	14	34	34
Rhode Island.....	1	1	.....	.....	1	1
Connecticut .....	.....	.....	1	1	1	1
New York	2	2	1	1	3	3
Canada	5	5	4	4	9	9
England	4	4	1	1	5	5
Germany	2	2	4	4	6	6
Ireland	22	22	16	16	38	38
Poland .....	.....	.....	1	1	1	1
Scotland .....	.....	.....	1	1	1	1
Unknown	9	9	3	3	12	12
	67	67	53	53	120	120

6. RESIDENCE OF PERSONS ADMITTED.

PLACES.	Males.	Females.	Total.
Massachusetts : —			
Suffolk County	61	52	113
Minn.	1	.....	1
New York.....	2	1	3
Unknown	3	.....	3
Total of persons.....	67	53	120

7. CIVIL CONDITION OF PERSONS ADMITTED.

NO. OF THE ADMISSIONS.	UNMARRIED.			MARRIED.			WIDOWED.			DIVORCED.			UNKNOWN.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
First	29	20	49	26	18	44	6	8	14	1	...	1	...	1	1
Second	2	2	4	3	...	3	...	1	1	...	1	1	...	...
Third .....	...	1	1	...	...	...	...	...	...	...	...	...	...	...
Twelfth .....	...	...	...	...	...	...	...	1	1	...	...	...	...	...
Total	31	23	54	29	18	47	6	10	16	1	1	2	...	1	1

8. OCCUPATION OF PERSONS ADMITTED.

OCCUPATION.	Male.	Female.	OCCUPATION.	Male.	Female.
Barber	1	.....	Musician	1	
Blacksmith	1	.....	Nurse .....	.....	1
Bookbinder	1	.....	Painter	2	
Book-keeper	1	.....	Peddler	1	
Brass-polisher	1	.....	Physician	1	
Bricklayer	1	.....	Porter	1	
Broker	2	.....	Printer	2	
Button-hole-maker ...	.....	1	Produce-dealer	1	
Carpenter	2	.....	Rope-maker	1	
Canvasser	1	.....	Salesman	2	
Clerk	8	.....	Saleswoman .....	.....	1
Compositor	1	.....	Seamstress .....	.....	3
Coppersmith	1	.....	School-teacher .....	.....	1
Deck-hand	1	.....	Sheriff's keeper	1	
Domestic .....	.....	9	Shoemaker	1	
Dress-maker .....	.....	1	Steward	1	
Drummer	1	.....	Tailor	1	
Elocutionist .....	.....	1	Tailoress .....	.....	1
Fireman	1	.....	Teamster	3	
Flour inspector	1	.....	Trader	1	
Freightman	1	.....	Trunk-maker	1	
Glass-maker	1	...	Unknown	2	4
Grocer	1	.....	Waiter	1	
Hatter	1	.....	Watch-maker	1	
Housewife .....	.....	15	Wood carver	1	
Laborer	3	.....	No occupation	4	14
Lithographer	1	.....		
Machinist	2	.....		
Merchant	2	.....		
Milliner .....	.....	1	Total	67	53

9. REPORTED DURATION OF INSANITY BEFORE LAST ADMISSION.

PREVIOUS DURATION.	FIRST ADMISSION TO ANY HOSPITAL.			ALL OTHER AD- MISSIONS.			TOTAL.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Congenital.....	.....	.....	.....	2	1	3	2	1	3
Under 1 month.....	14	11	25	4	3	7	18	14	32
From 1 to 3 months.....	17	10	27	4	3	7	21	13	34
3 to 6 months.....	4	2	6	.....	2	2	4	4	8
6 to 12 months.....	4	2	6	1	1	2	5	2	7
1 to 2 years	4	3	7	2	.....	2	6	4	10
2 to 5 years	4	5	9	1	.....	1	5	5	10
5 to 10 years	2	3	5	1	.....	1	3	3	6
10 to 20 years	1	1	2	.....	.....	.....	1	1	2
Unknown.....	2	2	4	1	4	5	3	6	9
Total of cases.....	52	39	91	16	14	30	68	53	121
Total of persons.....	52	39	91	15	14	29	67	53	120
Average in months.....	13	15	14	17	3	10			

10. FORM OF DISEASE IN THE CASES ADMITTED.

FORM OF DISEASE.	Males.	Females.	Total.
Mania, acute.....	15	19	34
“ chronic	1	5	6
“ recurrent	1	1	2
“ puerperal.....	.....	4	4
“ paralytic.....	1	.....	1
Melancholia, acute	10	12	22
“ chronic .....	.....	1	1
Dementia, primary.....	5	.....	5
“ secondary	2	4	6
“ chronic	1	.....	1
“ senile.....	9	5	14
General Paralysis	5	.....	5
Alcoholic Insanity.....	9	.....	9
Dipsomania.....	6	.....	6
Epilepsy	1	2	3
Monomania.....	1	.....	1
Paralytic Insanity.....	1	.....	1
Total	68	53	121

11. CAUSES OF INSANITY IN PERSONS ADMITTED.

CAUSES.	Males.	Females.	Total.
Mental, Grief .....	.....	3	3
“ Anxiety	5	4	9
Physical, Ill-health	3	10	13
“ Overwork	2	2	4
“ Change of life.....	.....	3	3
“ Childbirth .....	.....	4	4
“ Epilepsy	1	2	3
“ Alcohol	21	2	23
“ Senility	6	4	10
“ Congenital	2	1	3
“ ¹ Hereditary	4	.....	4
“ Masturbation	6	.....	6
“ Syphilis.....	2	1	3
“ Irregular Menstruation .....	.....	2	2
“ Injury to head	2	.....	2
“ Phthisis	1	1	2
“ Tumor of brain	1	.....	1
“ Unknown	11	14	25
Total.....	67	53	120

¹ Insane or nervous heredity in 35 cases.

12. RELATION TO HOSPITALS OF PERSONS ADMITTED.

HOSPITAL RELATIONS.	Males.	Females.	Total.
Never before in any hospital	52	39	91
Former inmates of this hospital	5	6	11
Former inmates of Danvers.....	1	2	3
Former inmates of Danvers and Taunton	1	.....	1
Former inmates of Taunton.....	3	2	5
Former inmates of McLean.....	2	2	4
Former inmates of hospitals in other States	2	1	3
Former inmates of foreign hospitals.....	1	.....	1
Former inmates of hospitals not stated....	.....	1	1
Total	67	53	120

13. HOW SUPPORTED.

SUPPORTED AS:	PATIENTS ADMITTED.			AVERAGE OF THE YEAR.		
	Males.	Fem.	Total.	Males.	Fem.	Total.
City patients.....	64	50	114	91	88	179
Private patients	4	3	7	5	12	17
Total.....	68	53	122	96	100	196

14. DISCHARGES CLASSIFIED BY ADMISSION AND RESULT.¹

ADMISSIONS.	RECOVERED.			MUCH IMPROVED.			UNIMPROVED.			TRANSFERRED.			DIED.			TOTAL.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
First	14	12	26	8	2	10	1	1	2	20	15	35	15	15	30	58	45	103
Second	2	3	5	1	.....	1	.....	.....	.....	.....	.....	.....	2	.....	2	5	3	8
Third .....	.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2
Fourth .....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Eleventh .....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Total	16	18	34	10	2	12	1	1	2	20	15	35	17	15	32	64	51	115

¹ Improved and Much Improved classed together.

15. ¹DURATION OF CASES DISCHARGED RECOVERED.

PERIOD.	DURATION BEFORE ADMISSION.			HOSPITAL RESI- DENCE.			WHOLE DURATION FROM THE ATTACK.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Congenital .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Under 1 month	9	5	14	3	.....	3	3	.....	3
From 1 to 3 months..	4	5	9	4	3	7	3	1	4
3 to 6.....	.....	4	4	3	5	8	4	4	8
6 to 12.....	.....	.....	.....	3	4	7	4	3	7
1 to 2 years ...	1	2	3	2	4	6	1	4	5
2 to 5.....	1	2	3	.....	1	1	.....	5	5
5 to 10.....	1	.....	1	.....	.....	.....	.....	.....	.....
10 to 20.....	.....	.....	.....	1	1	2	1	1	2
Over 20 years .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unknown .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total of cases.....	16	18	34	16	18	34	16	18	34
Total of persons...	15	18	33	15	18	33	15	18	33
Average in months.	10	8	9	15	20	18	16	28	22

¹ Of the attack resulting in recovery.

16. DURATION OF CASES RESULTING IN DEATH.¹

PERIOD.	DURATION BEFORE ADMISSION.			HOSPITAL RESI- DENCE.			WHOLE DURATION FROM THE ATTACK.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Congenital.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Under 1 month.....	1	2	3	2	1	3	.....	.....	.....
From 1 to 3 months..	2	1	3	1	2	3	1	1	2
3 to 6.....	2	.....	2	4	1	5	1	1	2
6 to 12.....	.....	1	1	3	1	4	.....	.....	.....
1 to 2 years ...	5	4	9	1	.....	1	3	1	4
2 to 5.....	3	1	4	5	2	7	7	2	9
5 to 10.....	3	1	4	.....	5	5	2	4	6
10 to 20.....	1	2	3	1	1	2	2	3	5
Over 20 years.....	.....	.....	.....	.....	2	2	1	3	4
Unknown.....	.....	3	3	.....	.....	.....	.....	.....	.....
Total.....	17	15	32	17	15	32	17	15	32
Average of known cases in months....	40	48	44	26	79	53	66	91	78

¹ Of the attack resulting in death.

17. CASES DISCHARGED BY RECOVERY OR DEATH. FORM OF INSANITY.

FORM OF INSANITY.	RECOVERIES.			DEATHS.		
	Males.	Females.	Total.	Males.	Females.	Total.
Mania, acute	3	11	14	1	2	3
“ chronic.....	.....	1	1	.....	2	2
Melancholia, acute	2	5	7	1	.....	1
“ chronic .....	.....	.....	.....	.....	1	1
Dementia, primary	2	.....	2	1	.....	1
“ secondary .....	.....	.....	.....	2	1	3
“ senile .....	.....	.....	.....	4	3	7
“ paralytic .....	.....	.....	.....	1	.....	1
Epilepsy .....	.....	.....	.....	1	3	4
Folie circulaire .....	.....	.....	.....	2	.....	2
General paralysis.....	.....	.....	.....	4	1	5
Alcoholic insanity	7	.....	7	.....	.....	.....
Dipsomania	2	.....	2	.....	.....	.....
Syphilitic insanity.....	.....	.....	.....	.....	1	1
Monomania .....	.....	1	1	.....	1	1
Total of cases.....	16	18	34	17	15	32

18. CAUSES OF DEATH.

Causes.	Males.	Females.	Total.
Senile dementia	5	2	7
Paralytic dementia .....	.....	1	1
General paralysis	4	1	5
Phthisis	1	2	3
Acute mania.....	.....	1	1
Epilepsy	1	2	3
Pernicious Anæmia	1	.....	1
Melancholia, acute.....	1	.....	1
Diarrhœa .....	.....	3	3
Apoplexy	1	1	2
Pneumonia.....	1	1	2
Œdema of the lungs.....	1	.....	1
Tumor of brain.....	1	.....	1
Heart disease.....	.....	1	1
Total.....	17	15	32

20. RECOVERIES CLASSIFIED BY RESULTS OF PREVIOUS ADMISSION.

[illegible]

21. DEATHS CLASSIFIED BY DURATION OF INSANITY AND TREATMENT.

PERIOD.	DURATION OF INSANITY.			WHOLE KNOWN PERIOD OF HOSPITAL RESIDENCE.		
	Male.	Female.	Total.	Male.	Female.	Total.
Congenital .....	.....	.....	.....	.....	.....	.....
Under 1 month.....	.....	.....	.....	1	1	2
From 1 to 3 months.....	.....	1	1	2	2	4
3 to 6 "	2	2	4	4	2	6
6 to 12 " .....	.....	.....	.....	2	1	3
1 to 2 years	3	1	4	2	.....	2
2 to 5 "	4	2	6	2	2	4
5 to 10 "	4	3	7	2	4	6
10 to 20 "	2	5	7	2	1	3
Over 20 years.....	2	1	3	.....	2	2
Total.....	17	15	32	17	15	32
Average of cases in months.	84.	88.	86.	35.	66.	50.

22. AGES OF THOSE WHO DIED.

AGES.	AT THE TIME OF THE FIRST ATTACK.			AT THE TIME OF DEATH.		
	Males.	Females.	Total.	Males.	Females.	To tal.
15 years and less .....	.....	.....	.....	.....	.....	.....
From 15 to 20 years	1	.....	1	.....	.....	.....
20 to 25	2	2	4	1	1	2
25 to 30 .....	.....	1	1	.....	1	1
30 to 35	2	.....	2	2	1	3
35 to 40	2	2	4	2	.....	2
40 to 50	2	6	8	4	1	5
50 to 60	4	1	5	2	6	8
60 to 70	3	1	4	4	1	5
70 to 80 .....	.....	1	1	2	2	
Over 80 years .....	.....	1	1	.....	2	2
Unknown	1	.....	1	.....	.....	.....
Totals	17	15	32	17	15	32

23. RELAPSED CASES ADMITTED IN EACH YEAR, AND DISCHARGED IN 1883-84.

YEARS ENDING APRIL 30.	CASES PREVIOUSLY RECOVERED IN THIS HOSPITAL.																				Remain- ing April 30, 1884.
	ADMITTED.			DISCHARGED AND DIED IN 1883-84.																	
				Recove'd.			M'ch imp			Imp'd.			Unimp'd.			Died.					
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.		T.
1840.....	...	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1841.....	...	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1842.....	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1843.....	...	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1844.....	...	4	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1845.....	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1846.....	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1847.....	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1848.....	2	1	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1849.....	1	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1850.....	1	3	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1851.....	2	1	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1852.....	1	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1853.....	2	2	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1854.....	3	3	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1855.....	2	3	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1856.....	5	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1857.....	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1858.....	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1859.....	3	3	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1860.....	8	5	13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1861.....	9	8	17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1862.....	12	4	16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..
1863.....	7	3	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1864.....	5	2	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1865.....	4	1	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1866.....	7	2	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..
1867.....	6	2	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1868.....	3	4	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1869.....	4	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..
1870.....	5	2	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..
1871.....	1	3	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1872.....	4	3	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1873.....	...	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1874.....	...	2	2	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1875.....	3	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1876.....	5	4	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1877.....	...	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1878.....	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2	..
1879.....	3	2	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2	..
1880.....	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..
1881.....	...	4	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	..
1882.....	5	4	9	..	2	2	..	..	..	..	..	..	..	..	1	..	1	3	1	4	..
1883.....	4	5	9	..	2	2	..	..	..	1	..	1	..	..	..	..	..	..	3	3	..
1884.....	5	6	11	1	2	3	..	..	..	1	..	1	..	..	1	..	1	2	4	6	..
Total.....	132	95	227	2	6	8	..	..	..	2	..	2	..	..	2	..	2	12	12	24	..

APPENDIX I.

REPORT BOSTON LUNATIC HOSPITAL.

REPORT OF WILLIAM W. GANNETT, M. D.,
PATHOLOGIST.

In the following report the clinical diagnosis is given in each case, and with it the result of the autopsy, both as regards macroscopic and microscopic appearances.

Comparatively little being known of the pathological anatomy of insanity, together with the fact that post-mortem changes may produce such marked alterations in the appearances presented by nerve-tissue, should make one cautious in drawing conclusions based on only a few observations; therefore, in the report, nothing more is given than a statement of what was observed.

Possibly, the numerical method, or better means of preparation of the tissues than those now known, may serve to throw more light upon this obscure subject.

Specimens were prepared by hardening in Mueller's fluid and alcohol, staining with carmine, mounting in balsam.

NO. I.

A CASE OF GENERAL PARESIS.

Autopsy twenty and one-half hours after death. Body medium size, well developed, somewhat emaciated; lividity of dependent portions; rigor mortis marked. Ratio of head to body and cranium to face both normal. The skull measured ant. post 175 m.m.; transversely 144 m.m. The calvaria showed nothing unusual; dura readily separated from skull of the usual thickness; neither the external nor internal surfaces showed anything of note; the meshes of the pia contained considerable clear fluid, most marked over the central region and there present in the form of cysts. Pia

thickened and opaque in patches. The brain nearly filled the cavity of the skull; convolutions well marked; considerable escape of clear fluid from the cavity of the skull on removing the brain; the vessels at the base and in the fissure of Sylvius showed, here and there, a few opaque yellow patches in the intima, apparently not diminishing the lumina of the vessels. The lateral ventricles contained each about 5 c.c. of clear fluid; the ependyma everywhere opaque, roughened, somewhat granular, with, here and there, a few milky-white patches. On the floor of the ventricle, about the middle of the *tænia semicircularis*, was to be seen a depression about the size of a filbert-meat; the ependyma, near the edges, of a snuff color; the choroid plexuses contained a moderate amount of blood; the floor of the fourth ventricle showed marked thickening and a granular appearance. The brain substance in general was quite firm; the gray cortex of the usual thickness, rather pale; the white substance firm; *puncta cruenta* well marked. On section of basal ganglia was to be seen a cavity about 7 m.m. in diameter, affecting the outer portion of the corpus striatum, inner capsule, and nucleus lentiformis at about the middle of the corpus striatum, as represented by a line drawn transversely. The contents of the cavity was a clear fluid; the walls thin, smooth, somewhat pigmented. Behind this, on the outer border of the nucleus lentiformis, was another cavity of about the same size, which presented similar appearances; nothing unusual about the pons and medulla. Pia everywhere readily separable from the brain substance; the cord and its membranes showed in gross nothing unusual. Diaphragm, both sides, at fourth rib. The pericardium contained only enough fluid to moisten its surfaces; pericardial surfaces reddened, injected, and covered with a thin false membrane, which was readily removed. Heart of usual size, left ventricle contracted and empty; right ventricle and auricle partly distended with half-coagulated blood. The aortic valves sufficient; the mitral admitted the tips of two and the tricuspid the tips of four fingers; valves and cavities not remarkable. Muscular substance somewhat browner than usual; coronary arteries in their usual condition. Pleural surfaces free from adhesions; the lungs covered the heart and retracted but partially on removing the sternum; the upper lobes pale, inelastic, downy, showing beneath the pleuræ numerous alveoli larger than

pins' heads; the lower lobes dark blue in color and denser than usual; on section a moist surface was shown, which yielded, on pressure, numerous drops of thick pus. Spleen one-half usual size, pale, density somewhat increased; capsule wrinkled; on section, follicles and trabeculæ distinct; pulp considerably decreased in amount and quite firm. Left kidney about one-third larger than usual, density normal, color darker than common; capsule readily detached, leaving a smooth surface, with, here and there, gray and reddish-gray elevations, from 2 to 10 m.m. in diameter; on section, the kidney was dark red in color, with numerous gray and reddish-gray streaks, from 2 to 8 m.m. in diameter, extending from the pelvis to the cortex; the tubular region not remarkable, beyond the dark color already mentioned; the pelvis contained a considerable amount of thick reddish pus; the mucous membrane reddened, injected, velvety, and showed numerous hemorrhages in its substance; the ureter enlarged nearly a centimeter in diameter, tortuous, and filled with pus; mucous membrane red and injected; right kidney one-half the usual size; external surface lobulated. On section, cortex greatly diminished; pelvis and calices dilated to five times their usual size. The mucous membrane, like that of the left kidney, contained numerous calculi, lining the calices; the ureter like the left. The bladder contained about 200 c.c. of cloudy, thick, opaque fluid; wall nearly doubled in thickness; trabeculæ increased much in size; mucous membrane reddened, injected, discolored, especially in the region of the trigonum. The so-called third lobe, represented by a nodule the size of a filbert, raised above the surface of the bladder. Œsophagus, stomach, and intestine, examined in situ, showed no unusual appearances. Liver not remarkable, beyond a slight increase in pigmentation in the central portion of the acini; aorta showed a few thick and opaque patches in the intima.

Diagnosis.

Œdema of the pia.

Moderate chronic thickening of the pia.

Chronic endymitis.

So-called apoplectic cyst of basal ganglia.

Recent pericarditis.

Pigmentation of the heart.

Emphysema of the lungs.

Capillary bronchitis.

Senile atrophy of the spleen.

Acute pyelo-nephritis left.

Hypertrophy and dilatation of the bladder with cystitis.

Dilatation of both ureters and ureteritis.

Hydronephrosis, right, with pyelitis, calculus formation, and partial atrophy of the kidney.

Hypertrophy of the prostate.

Chronic endaortitis.

MICROSCOPIC EXAMINATION OF BRAIN.

Pia infiltrated with round cells and showed numerous connective-tissue fibres.

Cortex: First layer showed a finely fibrous net-work of neuroglia fibres, with many spider cells.

The ganglion cells of the third layer extensively pigmented.

Vessels of cortex showed thickening of the wall, and a hyaline appearance of the same.

Cord (Upper Cervical): Hyaline degeneration of the vessels of the pia and cord, especially marked in the pia of the posterior fissure, where there was a moderate degree of round-cell infiltration.

In posterior part of Goll's columns there was a marked increase of the connective-tissue stroma, with disappearance, in places, of the axis cylinders; this most marked posteriorly.

Marked pigmentation of the ganglion cells.

Cervical Enlargement: Hyaline degeneration of the vessels, marked pigmentation of the ganglion cells.

Dorsal Cord: Marked hyaline degeneration of the vessels. Thickening of the pia, from connective tissue, with thickened, pyramidal-shaped prolongations into the cord itself.

Lumbar Cord: Much more marked hyaline degeneration of the vessels than in the upper parts of the cord. Pia of lateral portions much thickened from presence of connective-tissue fibres and small, round cells, and firmly adherent to cord. The connective tissue of the cord on the periphery much thickened, in part granu-

*

lar, in part fibrous. The axis cylinders had disappeared in patches in the above-described areas.

No. II.

CASE OF EPILEPSY.

Autopsy eighteen hours after death. Body, medium size, well-developed, well-nourished; no lividity of dependent portions; rigor mortis present; external surface of body very pale; face and upper part of thorax and shoulders of a pale yellow tint; ratio of head to body, and cranium to face, normal; the skull measured transversely 146 m.m.; ant. post 174 m.m.; the calvaria measured on an average 3 m.m. in thickness; the diploë thicker than usual and of a deep red color; dura somewhat thickened in patches, also opaque and of a pale yellow tint; sinuses contained a small amount of pale fluid blood; nothing unusual about either surface of dura; pia thick and opaque in patches and streaks, and presented a milky opacity; meshes of pia contained a small amount of clear fluid; the brain nearly filled the cavity of the skull and weighed 1,330 gm.; substance in general firm and very pale; vessels of pia contained little or no blood; vessels at base and fissure of Sylvius showed everywhere thin, delicate walls, and contained little or no fluid; lateral ventricles contained each about 20 c.c. of clear fluid, of a slightly yellow tint; cavities enlarged about one half; ependyma everywhere smooth and shining except in the 4th ventricle, where it was slightly warty and granular; choroid plexuses pale except at the point where they enter the middle horns; just above this point they were occupied by oblong masses, 6 by 12 m.m.; these of a gray yellow color, quite firm, and in spots infiltrated with calcareous material; cortex in general of the usual thickness, but very pale; white substance also very pale, no puncta cruenta apparent—sufficiently firm; on right side, to the outside of the corpus striatum, were a series of red points larger than pins' heads, which could not be washed away; section through the corpora striata, pons, medulla, optic thalami, and cerebellum, showed nothing beyond marked pallor; pia readily separable from brain substance.

Diaphragm on right side, at third intercostal space; on left side, at fourth rib; pericardium contained about 50 c.c. of clear

fluid, tinged yellow; visceral surface of pericardium showed several small petechiæ; heart somewhat enlarged in both directions; left ventricle fairly well contracted, and empty; right ventricle and auricle contained a small amount of partly coagulated pale blood; aortic valves sufficient; mitral admitted the tips of three fingers; the tricuspid, the tips of five fingers; nothing unusual about valves; cavity of right ventricle somewhat enlarged; walls of usual thickness; muscular substance very pale, and of a mottled and opaque, yellow color; this particularly marked in the *musculi pectinati*. The coronary arteries were examined to their finest branches possible with fine scissors, and showed no changes in lamina or walls; the pleural cavities contained each about 120 c.c. of clear fluid; pleural surfaces not unusual; lungs retracted but little on removing the sternum; pale and somewhat crepitant; more doughy than usual, and in the lower lobes showed a gelatinous appearance; on section, surface very pale and moist, yielding, on pressure, throughout, a large amount of thin aërated fluid; spleen of usual size, color and density; on section, the follicles and trabeculæ indistinct; pulp soft; kidneys of usual size, very pale, density increased; capsule more adherent than usual, and, on removal, tore away portions of the renal substance; section presented throughout a nearly uniform, pale, and slightly opaque surface; cortex and medulla in usual ratio; in the cortex were streaks and specks of an opaque yellow color, lying in the midst of gray or more translucent areas; glomeruli everywhere pale and glistening; pelvis normal; bladder distended, showed nothing unusual; œsophagus, stomach and intestines presented nothing worthy of note; liver of usual size and density; color, dark red; beneath the capsule were seen the central portions of acini, enlarged and red, peripheral portions paler, but surface showed same appearances; the gall bladder contained about 40 c.c. of bile; bile duct pervious; aorta showed in intima a few translucent elevated patches; marrow of sternum very red, that of tibia yellow and streaked with red.

Diagnosis.

Increase of diploë of calvaria — very red color.

Moderate thickening of dura.

Chronic lepto-meningitis, with moderate œdema of pia.

Slight dilatation of ventricles.

Psammoma of choroid plexuses.

Anæmia of brain.

Sub-pericardial ecchymosis.

Hypertrophy of heart.

Relative insufficiency of tricuspid.

Chronic parenchymatous myocarditis.

Œdema of lungs.

Chronic diffuse nephritis.

Nutmeg atrophy of the liver.

Chronic endoarteritis.

Microscopic examination of brain.

Slight increase in the connective-tissue fibres of the pia.

The cortex throughout showed nothing abnormal.

The white matter near the cortex showed a moderate degree of round-cell infiltration of the adventitia of the vessels, with yellow pigment in the adventitial lymph-space.

No. III.

CASE OF MANIA, WITH DELUSIONS OF PERSECUTION.

Autopsy eight hours after death. Body medium size, well developed, fairly well nourished; skin of a yellowish tint; no lividity of dependent portions; rigor mortis present. Ratio of head to body and cranium to face, normal. Antero-post diameter of skull 174 m.m.; transverse, 146 m.m. Calvaria thin; ratio of diploë to tables normal. Dura everywhere translucent; neither external or internal surface showed anything worthy of note. Sinuses contained a small amount of liquid blood. Pia thin and delicate; meshes contained a small amount of clear fluid; vessels of pia contained little or no blood; vessels at base and in the fissure of Sylvius showed everywhere thin walls, and were everywhere completely collapsed. Lateral ventricles contained each about 10 c.c. clear fluid. Ependyma smooth, shining, and very pale; choroid plexuses and velum interpositum also very pale; fourth ventricle showed nothing worthy of note. Brain substance in general soft. On section cortex of usual thickness, very pale, sown-

ing here and there a narrow yellow line about the middle; white matter showed on section a moist, pale surface with few or no puncta cruenta. Section of basal ganglia, pons, medulla and cerebellum showed nothing of note beyond striking pallor. Pia everywhere readily separable from brain substance; the brain as a whole filled the cavity of the skull, and weighed 1,345 gm.

Diaphragm at fourth intercostal space on the right, at the fourth rib on the left. The pericardium contained about 20 c.c. of clear fluid, stained yellow. Pericardial surfaces thickened and opaque in patches. Heart of usual size; left ventricle contracted and empty; right ventricle and auricle flaccid, and contained a small amount of thin fluid blood, with thin coagula floating in it; aortic valves sufficient; the mitral valve admitted the tips of three fingers, the tricuspid the tips of four; cavities showed nothing unusual; walls of the usual thickness; muscular substance pale and firm. On the edge of closure of the aortic curtain of mitral valve was a sessile mass measuring $10 \times 8 \times 6$ m.m., of a yellow-white color, firm, showing on section a pale yellow surface, and small amount of clear fluid oozing therefrom. Left pleural surface free from adhesions; right adherent throughout. Left lung partially retracted, pale, inelastic, downy; on section, showed a dry, pale surface. Numerous alveoli, the size of pins' heads, were made out. Right lung partially retracted, dense and doughy; on section, a very moist surface was presented, out of which could be expressed a large amount of aërated serum. Bronchial mucous membrane showed nothing of note. Spleen of usual size, color, and density. On section, follicles and trabeculæ distinct; pulp, usual amount and firm. Kidneys usual size and density, pale; capsule detached with ease, and left a smooth surface beneath; ratio of cortex to medulla normal; on section, the surface was so pale that the distinction between tubular regions could not be made out. Bladder not remarkable. Stomach, œsophagus, and intestines showed nothing worthy of note. Liver of usual size and density; color, more yellow-brown than usual; distinction between central and peripheral parts of acini not well made out; gall bladder contained about 40 c.c. of thick bile. Bile ducts pervious; abundant staining of intestinal mucous membrane with bile. Aorta normal.

Diagnosis.

Œdema and anæmia of brain.

Myxo-lipoma of heart-valve.

Chronic circumscribed pericarditis.

Œdema of lung.

Emphysema of lung.

On microscopic examination of the brain nothing abnormal was discovered.

No. IV.**CASE OF FOLIE CIRCULAIRE.**

Body large, well developed, much emaciated; ratio of head to body and of cranium to face apparently normal; head dolicocephalic; antero-posterior diameter, 186; transverse diameter, 136, ratio 71:100.

Calvaria thin; nothing unusual observed about it. Dura so intimately adherent to calvaria that both had to be removed together. Dura somewhat thickened, but neither the external nor internal surfaces showed anything worthy of special note; the sinuses contained a moderate amount of fluid blood.

The pia everywhere thin and delicate, except in that portion forming a bridge across the fissures of Sylvius, where it was thickened and opaque, but showed no further changes.

Here and there in the pia were circumscribed collections of clear fluid, about the size of filberts. The vessels of the pia contained a moderate amount of blood.

The brain nearly filled the cavity of the skull, and weighed 1,442 grammes. Escape of considerable clear fluid from the cavity of the skull during removal of the brain.

The vessels of the base and in the fissure of Sylvius were distended with dark blood, which in many places was coagulated (post-mortem coagulation). The vessel-walls thin and delicate.

The lateral ventricles contained each about 10 c.c. clear fluid; ependyma everywhere smooth and shining; choroid plexuses pale, contained numerous small cysts, with clear fluid contents.

The ependyma of the third and fourth ventricles showed here and there a few warty nodules, giving it, over limited areas, a granular appearance.

Velum interpositum pale.

The brain substance in general quite firm; on section, the gray cortex of the usual thickness, rather pale.

White matter very pale, surface moister than usual, puncta cruenta few and very small.

Section of basal ganglia, pons, medulla, and cerebellum showed nothing unusual beyond pallor of the parts.

Pia everywhere readily separable from the brain substance.

Cord not examined.

Diaphragm right and left, at fourth rib.

Pericardium contained about 15 c.c. clear fluid; its surfaces not remarkable.

Heart of the usual size. Left ventricle contracted and empty; right ventricle and auricle moderately distended, with partly coagulated blood. Aortic valve sufficient. Mitral admitted tips of three fingers; tricuspid, tips of four. Valves and cavities showed nothing unusual. Muscular substance browner than under normal circumstances.

Pleural surfaces free from adhesions; pleural cavities contained no fluid.

Lungs retract but little on removal of sternum; very pale. Numerous alveoli, size of pin's head, to be seen beneath pleura. The lungs inelastic, downy; here and there areas somewhat denser; on section, surface in general dry and remarkably pale. Here and there patches which were moister, and yielded on pressure a small amount of aërated fluid.

Spleen of the usual size, color, and density, showing on section nothing worthy of special note.

The kidneys of the usual size and color, density slightly increased; capsule detached with ease.

On section, ratio of cortex to medulla as usual. Distinction between regions of straight and of convoluted tubules not so readily made out as usual. A few grayish streaks in cortex. In the calyces and pelvis of right kidney were numerous small calculi, of a grayish-brown color; also in right ureter and bladder considerable

gravel of a similar color. Beyond this the bladder showed nothing unusual.

The œsophagus, stomach, and intestines, showed no appearances worthy of note.

The liver slightly reduced in size of a browner color, density not especially altered. On section, the acini somewhat smaller than usual, central portions of a brown color.

Bile ducts pervious.

Aorta not remarkable.

Diagnosis.

Thickening of dura (diffuse).

Œdema of pia (circumscribed).

Thickening of pia (circumscribed).

Distension of basal vessels.

Chronic circumscribed ependymitis.

Anæmia of brain.

Pigmentation of muscular substance of heart.

Emphysema and circumscribed œdema of lungs.

Slight degree of chronic interstitial nephritis with calculi.

Brown atrophy of liver.

The microscopic examination of the brain showed nothing worthy of note.

No. V.

CASE OF MELANCHOLIA.

Autopsy twenty-one hours after death; body small, much emaciated; eyes sunken.

Ratio of head to body and cranium to face apparently normal; antero-posterior diameter of skull 132 m.m.; transverse, 70 m.m.

Calvaria of the usual thickness, but the diploëtic portion replaced by compact bone substance.

Dura thickened and opaque in patches, more adherent to the bone than usual. The sinuses contained partly coagulated blood. *Pia* thin and delicate except along the course of a few of the larger

veins, where a slight thickening was to be observed. The muscles of the pia contained no fluid ; its vessels, the usual amount of blood.

The brain filled the cavity of the skull, weighed 1,190 grammes, and, on careful examination, failed to show in any of its parts a variation from the normal.

The pericardium contained a few c.c. clear fluid.

The heart somewhat diminished in size, firm, and of a reddish-brown color ; aortic and pulmonic valves sufficient. Mitral admitted tips of three fingers ; tricuspid, tips of four. Valves and cavities not remarkable ; muscular substance firm, and of a darker brown than usual.

Pleural surfaces, right, free from adhesions ; left covered with a recent fibrinous false membrane.

Left lung partially retracted, denser than usual. On section showed numerous reddish-gray nodules and on pressure yielded many drops of pus and a moderate amount of aërated serum. In the lower lobe of the right lung was a firm, homogeneous, dark bluish-red (hæmorrhagic) nodule, the size of a hen's egg. (No embolus discovered.) The cut surface of the lower lobe yielded, on pressure, a moderate amount of aërated fluid.

Spleen of the usual size, dark in color, density increased. On section, pulp firm and of a dark color, follicles and trabeculæ indistinct.

Kidneys of usual size, density increased, of a dark color. On section, ratio of cortex to medulla normal ; cortex throughout presents a dark, homogeneous surface, in which little or no distinction between the regions of straight and convoluted tubules is to be made out.

The mucous membrane of the bladder in the region of the trigonum was thickened, injected, velvety.

Œsophagus, stomach, and intestines not remarkable.

The liver somewhat reduced in size, of a dark bluish-red color, distinction between the central and peripheral parts of the acini being lost.

The aorta showed in the intima numerous thickened and opaque yellow patches.

Diagnosis.

Slight chronic fibrous pachymeningitis.
Brown atrophy of heart.
Acute fibrinous pleurisy.
Acute broncho-pneumonia (inhalation.)
Acute capillary bronchitis.
Œdema of lungs.
Passive congestion of spleen, kidneys, and liver.
Chronic endaortitis.

Microscopic Examination of Brain.

In some specimens the vessels of the cortex contained more blood corpuscles than usual; in other sections no such increase was observed.

Occasionally in the cortex, more frequently in the white matter adjoining the cortex, a moderate degree of round-cell infiltration of the adventitia was to be made out, with pigment in the adventitial lymph-space.

Otherwise nothing abnormal was discovered.

No. VI.**CASE OF DEMENTIA AFTER APOPLEXY.**

Autopsy eighteen hours post mortem; body medium-sized, well developed, well nourished, somewhat emaciated. Lividity of dependent portions, rigor mortis present.

Ratio of head to body and cranium to face, apparently normal; nothing unusual about the pericranium or external surface of calvaria.

Antero-posterior diameter of skull, 174 m.m.; transverse, 136 m.m.

Calvaria of usual thickness, readily separable from dura; dura translucent, its external and internal surfaces not remarkable; sinuses contained a small amount of partly coagulated blood.

Pia opaque and cloudy throughout, but most marked along the course of the vessels.

Moderate collection of clear fluid in the meshes of the pia.

The brain nearly, though not quite, filled the cavity of the skull; weighed 1,220 grammes.

The basilar artery showed two small elevated, thickened patches in the intima, not more than 2 m.m. in diameter, and not at all obstructing the lumen of the vessel.

The lateral ventricles contained each about 10 c.c. clear fluid; ependyma not unusual. Floor showed appearances to be described in connection with the basal ganglia.

Brain substance in general quite firm; cortex of usual thickness and color.

Surface of white matter, on section, slightly moist; puncta cruenta well marked.

The basal ganglia showed on external inspection and on section the following appearances: —

The outer, posterior part of the right nucleus lentiformis laterally was softened and of a yellow color; the anterior superficial part of the right thalamus opticus showed a similar appearance. Marked depression of left thalamus opticus, below floor of ventricle; on section the left thalamus showed a connective-tissue cicatrix, with much red-brown pigment, involving the upper third of thalamus.

The remaining portions of the brain showed, on section, nothing unusual.

Cord not examined.

Heart increased in size, particularly in the vertical diameter. Left ventricle contracted and empty; right ventricle and auricle moderately distended with partly coagulated blood. Aortic and pulmonic valves sufficient; mitral tips of three fingers; tricuspid, tips of four. Valves and cavities not remarkable. Walls of left ventricle nearly doubled in thickness.

Left lung retracted, crepitant, several nodules to be felt from the outside of lower lobe, which, on section of lung, were found to be reddish-gray nodules, denser than the lung substance, and about the size of filbert-meats. Right lung but little retracted, the lower lobe occupied throughout by nodules like those described in connection with the left lung.

Spleen of the usual size and density, of a blue-black (almost

coal-black) color. On section, follicles and trabeculæ indistinct; pulp of the usual amount, but of a black color. Microscopically pulp found to contain much black pigment in and outside of cells.

Kidneys reduced one-half in size, of a red color, much increased density. Capsule detached with difficulty, removing portions of renal substance with it, and leaving a granular surface beneath.

On section, cortex much diminished in thickness, showing a grayish, homogeneous surface, in which distinction between regions of straight and convoluted tubules was difficult to make out. Wall of the vessels somewhat increased in thickness.

Œsophagus, stomach, and intestines not remarkable.

Liver of the usual size; it showed beneath the capsule and in the cut surface numerous black, circular areas with a diameter of about 3 m.m. Microscopically, found to be patches where the liver-cells contained much black pigments.

Aorta showed in the intima numerous elevated patches and some ulcers, both containing black pigment.

Diagnosis.

Chronic diffuse lepto-meningitis.

Œdema of pia.

Yellow softening of basal ganglia as detailed.

Hypertrophy of the heart (left ventricle), without valvular disease.

Acute broncho-pneumonia (inhalation).

Melanæmic spleen.

Chronic interstitial nephritis.

Melanæmic liver.

Chronic endaortitis with pigmentation.

No. VII.

CASE OF DEMENTIA AFTER APOPLEXY.

Autopsy eighteen hours after death.

Body large, well developed, well nourished; panniculus adiposus thick; lividity of dependent portions; rigor mortis present. A few superficial cicatrices at the junction of nose and forehead. Labiæ minora and tissues surrounding the introitus of a grayish-

black color, and softened surface showing considerable loss of substance and having a foul odor. Ratio of head to body and cranium to face not remarkable. Ant.-post. diam. 181 m.m.; transv., 130 m.m. Nothing unusual observed about the pericranium or external surface of the calvaria. Calvaria of usual thickness; ratio of diploë to tables normal. Dura more adherent to bone than usual, and somewhat thickened; inner surface of the dura, covering the convexities, of a red-brown color, in patches which could not be removed; sinuses contained a small amount of partly coagulated blood.

Pia everywhere thin and delicate; its meshes contained a small amount of clear fluid. Sulci somewhat wider than usual, convolutions slightly smaller. Brain nearly filled the cavity of the skull, and weighed 1,235 grs. Vessels in the fissures of Sylvius on the left side were here and there thickened circularly and showed some opacity of intima; one branch, having a lumen of 1 m.m. in diameter, being completely obliterated by an opaque, gray, adherent mass. The lateral ventricles contained each about 15 c.c. of clear fluid, and were of the usual size; ependyma thickened, granular, and warty, most marked on anterior portion. Anterior portion of left corpus striatum forming the floor of left ventricle was depressed below the level of the surface, and was of a yellowish color; brain substance, in general, firm; section of gray cortex showed it to be of nearly the usual thickness, but paler than common; surface of the white substance somewhat moist; puncta cruenta small.

Section of the basal ganglia showed the anterior half of the corpus striatum occupied by a cavity about 10 m.m. in diameter, with clear fluid contents; the wall of softened brain substance of a brown color; posterior half of the left nucleus lentiformis showed a soft yellow area of about 5 m.m. in diameter; section of the remaining portion of the brain showed nothing unusual; pia everywhere separable from brain substance; cord not examined; diaphragm on right side at the third rib, on left side third intercostal space; the pericardium contained enough fluid to moisten the surfaces; heart of usual size; all the cavities flaccid, and contained only a small amount of partly coagulated blood; aortic valves sufficient; mitral admitted the tips of three, and the tricuspid the tips of four, fingers. Valves and cavities not remarkable.

Walls of both sides flaccid and of an opaque yellow color in streaks and patches, most marked in papillary muscles.

Pleural surfaces of left lung free from adhesions ; right adherent in two or three places by firm bands ; lungs retracted, crepitant, and showed on section nothing of note ; spleen of the usual size, color, and decreased density ; on section, follicles and trabeculae distinct ; pulp softened apparently from decomposition ; kidneys of usual size, pale, density decreased ; capsule detached with difficulty leaving here and there a granular surface ; external surface mottled red and yellow ; on section, cortex of usual thickness, showing in places opaque yellow patches in streaks, corresponding to the seat of the convoluted tubules ; pelvic organs everywhere adherent to one another by firm connective tissue bands ; uterus showed. on the external surface, numerous projecting nodules, varying in size from a filbert-meat to small walnut ; on section, several such nodules were seen on wall ; bladder contained about 15 c.c. of thick, opaque, gray-black, foul-smelling fluid ; mucous membrane thickened and injected, and in some places covered with shreds of false membrane ; œsophagus, stomach, and intestines showed nothing of note ; liver of usual size, decreased density, and yellowish color ; section showed a homogeneous opaque surface, with here and there small red points corresponding to the centre of the acini ; aorta showed in intima several opaque, yellow, elevated patches.

Diagnosis.

Gangrene of vulva.

Pachymeningitis interna chronica hemorrhagica et pigmentosa.

Slight œdema of pia.

Obliterating endarteritis of basal vessels.

Chronic yellow softening, with cyst formation, in left corpus striatum.

Yellow softening of left nucleus lentiformis.

Chronic ependymitis.

Chronic parenchymatous myocarditis.

Chronic adhesive pleurisy.

Chronic diffuse nephritis (parenchymatous predominating)

Chronic pelvic peritonitis.

Fibro-myomata of uterus.

Fatty infiltration of liver.

Chronic endaortitis.

Microscopic examination showed fatty degeneration of heart and kidneys.

NO. VIII.

CASE OF SUICIDAL MELANCHOLIA.

Autopsy nineteen hours after death; body medium size, well developed, much emaciated; slight lividity of dependent portions; rigor mortis present; ratio of cranium to face, and head to body, normal; ant.-post. diam., 187; trans., 135. Nothing unusual about calvaria; somewhat more adherent than usual to dura, the latter thickened and opaque along longitudinal sinus. The sinuses contained a moderate amount of coagulated blood; brain almost filled the cavity of the skull, and weighed 1440 gm.; pia showed here and there milky opacity; the meshes contained a small amount of clear fluid; vessels at the base and fissure of Sylvius showed numerous yellow and thickened patches in the intima, apparently not obstructing the lumina; the lateral ventricles contained each about 15 c.c. of clear fluid; ventricles dilated one-half; ependyma showed, here and there, grayish elevations, the size of a pin's head. The fourth ventricle showed nothing unusual; pericardium contained about 5 c.c. of clear fluid; pericardial surface not remarkable; heart small; left ventricle contracted and empty; auricles and right ventricle moderately distended with soft coagula; aortic and pulmonary valves sufficient; mitral admitted the tips of three, the tricuspid the tips of four, fingers; valves and cavities not remarkable; muscular substance firm, color red-brown; coronary arteries apparent as convoluted hard tubes, showing in the intima numerous opaque yellow masses, in part calcified, in part of a cartilage-like density; lumen apparently not decreased in diameter; pleural surfaces free from adhesions; lungs, on removing the sternum, filled the cavity of the chest, pale in color, little crepitant, having an inelastic, downy feel. Beneath pleural surfaces could be seen numerous alveoli as large as pin's heads; section of left lung pale and dry, otherwise as usual; section right lung darker red color, moist, with here and there grayish, granular nodules about

1 c.m. in diameter; bronchial mucous membrane red, injected and covered with a layer of puriform fluid; spleen decreased one-fourth in size, pale, density somewhat increased; on section, follicles and trabeculæ, distinct; pulp small in amount and pale; kidneys reduced one-fourth in size, usual color, density increased; capsule detached with difficulty, and left a granular surface beneath; on section, cortex considerably decreased, cut surface presenting a grayish, somewhat translucent, appearance; bladder not remarkable; œsophagus and stomach not unusual. The small intestine showed numerous recent intussusceptions, peritoneal surfaces being normal; liver decreased one-third in size, of a red-brown color, slightly increased density. On section, acini smaller than usual, central portions distinct as red-brown points; periphery as pale lines. Bile ducts pervious; aorta showed on intima several opaque yellow patches; splenic artery showed a partly serpentine course, with calcification of media.

Diagnosis.

Moderate degree of pachymeningitis and leptomengitis chronic.

Slight œdema of pia.

Slight enlargement of ventricles.

Brown atrophy of the heart, with endarteritis of coronary vessels.

Inhalation pneumonia.

Recent bronchitis.

Senile atrophy; spleen and kidney.

Brown atrophy of liver.

Chronic endaortitis.

Serpentine aneurism of splenic artery.

Microscopic Examination of Brain.

The outermost portion of the first layer of the cortex showed, here and there, a finely fibrous mesh-work, but nowhere spider-cells.

Occasionally in the cortex, a vessel, showing round-cell infiltration of the adventitia, was to be seen, with a small amount of pigment in the adventitia.

No. IX.

CASE OF GENERAL PARESIS.

Autopsy ten hours after death; body medium size, well developed, somewhat emaciated; slight lividity of dependent portions; rigor mortis present. Ratio, head to body, and cranium to face, apparently normal. Ant.-post., 174; transv., 142. Over angle of right scapula, over sacrum, over tendo-Achillis, on either side, was a loss of substance in dry, black patches. Calvaria of usual thickness, readily separable from dura. Dura everywhere translucent, inner surface smooth and shining. Sinuses contained a small amount of partly coagulated blood. The pia showed throughout a slight opacity; meshes contained considerable clear fluid; the brain did not quite fill the cavity of the skull; weight 1,325 gm. Vessels at base and in the fissure of Sylvius everywhere thin and delicate. Lateral ventricles contained each about 10 c.c. of clear fluid. Cavities slightly enlarged. Ependyma in anterior portions slightly granular; ependyma of fourth ventricle very notably granular. Velum interpositum, choroid plexuses contained about the usual amount of blood. Cortex in the fissure of Rolando on either side slightly decreased in thickness and rather pale; elsewhere of usual thickness. In the frontal region numerous red streaks and points, corresponding to the position of the vessels, could be made out; white substance of good color, consistency, puncta cruenta well marked. Section of cerebellum and basal ganglia showed nothing of note. Pons and medulla not opened, being hardened for the microscope.

Pia could be separated from the brain substance with ease throughout. In pia and cord were a few thin, calcareous plates; otherwise cord showed nothing remarkable. Diaphragm on the right side at the fourth rib, on left side at fourth intercostal space. Pericardium contained about 15 c.c. clear fluid. Pericardial surface not unusual. Heart somewhat increased in size in both diameters. Left ventricle firmly contracted and empty. Right ventricle and auricle distended with firm, fibrinous coagula. Aortic and pulmonic valves sufficient. Mitral admitted the tips of three, tricuspid the tips of five, fingers. Valves and cavities not remarkable. Wall of left ventricle one-half as thick again as usual. Mus-

cular substance throughout firm and of good color. Pleural surfaces on both sides adherent; over middle and lower portions were readily torn adhesions. Pleural surfaces were covered with a thick layer of recent fibrin. The lungs, partially retracted, of a dark red-blue color over lower lobes, pale over upper lobes. Lower lobes much denser than usual, and over lower and right upper lobes could be felt numerous nodules varying in size from a pea to a walnut. Beneath pleural surfaces many of these nodules showed a red centre and an opaque gray-yellow periphery. On section, these nodules showed in part a rather firm red central portion, with a paler opaque yellow border, and in places, a softened, curdy, gray-black centre with infiltrated dark red lung substance on the periphery. Lower lobes contained throughout an excess of blood. Bronchial mucous membrane not remarkable. Spleen of usual size, color, and density. On section, follicles and trabeculae distinct pulp form. Kidneys diminished one-third in size, normal color, density slightly increased. Capsules detached with difficulty, leaving a granular surface beneath. Beneath the capsule of the right kidney was a cyst the size of a filbert, with clear fluid contents. On section, cortex red, diminished about one-fourth in thickness. Distinction between regions of cortex not readily made out. Bladder contained about 300 c.c. of clear fluid. Vesical and prostatic plexuses distended with firm, adherent, obliterating thrombi. The left testicle lay upon the brim of the pelvis, one-half the size of the right. Oesophagus, stomach, and intestines, together with the liver, not unusual, beyond a black, spongy tumor beneath the capsule of the latter. Aorta showed numerous opaque yellow patches of intima. In the right common iliac vein, just before its junction with the inf. vena cava, was an adherent pale thrombus.

Diagnosis.

Decubitus.

Œdema and thickening of pia.

Moderate atrophy of brain.

Hypertrophy of left ventricle of heart.

Acute fibrinous pleurisy.

Embolism of lungs with hemorrhagic infarctions and septic necrosis.

Chronic interstitial nephritis.

Undescended testicle.

Cavernous angioma of liver.

Thrombosis of vesical and prostatic plexuses and right common iliac vein.

Microscopic Examination of the Brain.

The perivascular spaces in general were considerably enlarged; the vessel lying usually at one side, and showing nearly everywhere abundant round-cell infiltration of the adventitia.

The first and second layers of the cortex were not remarkable; but in the third and fourth layers were to be seen patches large enough to fill completely the field of a Zeiss objective C, made up of very numerous round cells, a few red blood corpuscles, more or less degenerated, imbedded in a connective tissue, which was evidently the neuroglia of the part increased in amount. The whole represented probably an early stage of insular sclerosis originating around vessels.

The spinal cord in various regions showed no variation from the normal appearances.

No. X.

CASE OF SECONDARY DEMENTIA.

Autopsy fifteen hours after death.

Body small, much emaciated; rigor mortis present; gangrenous bed-sore over each trochanter and on sacrum; both thighs drawn from the right toward the left, semi-flexed upon the abdomen, and fixed in that position.

Ratio of head to body, and of cranium to face, apparently normal; scalp normal; skull, antero-posterior diameter, 178 m.m., transverse, 139 m.m. Nothing unusual observed about calvaria, which was moderately adherent to dura mater.

Sinuses contained some small clots, dark in color; a small amount of clear fluid escaped from the skull on removing the brain. Dura showed nothing unusual; pia showed slight thickening and

opacity over the vertex along the course of the vessels; thin and transparent over the base. Pia, not adherent to convolutions, contained some clear fluid in its meshes. The arteries at the base contained some fluid blood, were partly collapsed, and were quite free from disease in their walls, and apparently free from thrombi.

Brain weighed 1,120 grms.; convolutions small and summits flattened, giving to the brain a smooth, even surface. Lateral ventricles much distended; about 100 c.m. clear fluid escaping when opened. Ependyma of lateral ventricles distinctly granular. Choroid plexuses of lateral ventricles and vessels of velum interpositum contained a small amount of blood, and appeared normal. Ependyma of floor of third ventricle not examined. Fourth ventricle contained a cyst with clear contents, the size of a cherry-stone, in the choroid plexus of the right side. Entire floor of ventricle granular, even warty in calamus scriptorius. White substance of brain on section very moist, and showed numerous openings about the size of a pin's head; this condition being most marked in the anterior lobes. The gray cortex in places showed a distinct yellowish stratum in its deeper parts. The basal ganglia showed the same condition (*état criblé*) as the hemispheres. The convolutions were small, even for a small brain.

The diaphragm situated at the fourth intercostal space on both sides.

Lungs but little retracted on opening thorax. Only enough fluid in pleural sacs to moisten surfaces. Right lung moderately adherent throughout by old adhesions; two lower lobes felt solid, and did not shrink when removed and handled. Section through the lung showed in the apex small groups of gray nodules about the size of a pin's head, around the finer bronchial tubes; in the lower lobes numerous nodules, varying in size from a pea to a walnut, of a grayish granular appearance. In places were to be seen cavities the size of filberts, with shreddy, grayish-black walls, and foul-smelling, puriform contents. The cut bronchioles showed here and there drops of pus, and, on cutting them open, the mucous membrane was seen injected. A portion of the upper lobe was emphysematous.

Left lung slightly adherent to diaphragm and to the chest-wall for

a few square inches by recent false membrane. The visceral pleura in this situation was of a dark-brown color, without lustre, and a thin layer of fibrine was easily removed. On section, the corresponding portion of the lung was dark in color, and denser on section than normal, and, on opening the pulmonary artery, a firm decolorized embolus was found filling a tertiary branch of the pulmonary artery with a red, adherent, completely obstructing thrombus, extending into the finer divisions. The apex of the left lung showed the same amount of emphysema and many groups of small nodules similar to those described in connection with the right lung.

The pericardium contained about 15 c.m. of clear fluid; showed nothing unusual.

Tricuspid valves admitted three fingers; mitral, two. Right auricle contained a moderate amount of blood. Right ventricle contained some black coagula and some small, soft, pale clots entangled in the trabeculæ; also, a post-mortem clot, extending into the pulmonary artery. Left ventricle was partly filled with dark clots, part of which extended into the aorta. On removing clots aortic valves found competent by water test. Lining membrane and muscular substance of heart normal. Free edge of one mitral valve found a little shortened and thickened. Coronary vessels pervious.

Liver showed nothing unusual beyond an increase of pigment in the centres of the acini. Gall-ducts pervious.

Stomach and intestines presented nothing unusual.

Spleen normal in size and structure.

Kidneys reduced one-fourth in size; cortex much thinned. On removing capsule the periphery of the cortex was removed in a rough layer.

Uterus retroflexed, otherwise normal.

Ovaries and vagina presented nothing unusual.

Vesical and vaginal plexuses filled with firm, dark-red, completely obliterating adherent thrombi.

Microscopic Examination.

Fresh; brain showed pigmentation of ganglion cells of gray cortex and basal ganglia. Considerable free pigment and pigment in the

adventitial lymph-sheaths of the gray cortex and cerebellum. No evidence of miliary aneurisms discovered.

Kidney showed several sclerosed glomeruli, a general but moderate increase in amount of connective tissue ; here and there epithelium of convoluted tubulès contained fat-drops.

Diagnosis.

Decubitus.

Chronic leptomeningitis, }
Œdema of pia, } moderate.

Microgyri.

Chronic ependymitis, with dilatation of ventricles.

Cyst of choroid plexus of fourth ventricle.

Œdema of brain.

État criblé.

Chronic adhesive pleurisy.

Acute fibrinous pleurisy.

Tuberculosis of lungs and tubercular peribronchitis.

Acute diffuse bronchitis.

Acute broncho-pneumonia (inhalation).

Hæmorrhagic infarction of lung.

Embolism and secondary thrombosis of branch of pulmonary artery.

Nodules of septic necrosis of lungs.

Chronic vesicular emphysema.

Thrombosis of vesical and vaginal plexuses.

Chronic interstitial nephritis (moderate degree).

The microscopic examination of the cortical portions of this brain showed no variation from the normal.

No. XI.

CASE OF FOLIE CIRCULAIRE.

Autopsy thirty-four hours after death. Body medium size ; well developed ; somewhat emaciated ; moderate lividity of dependent portions ; rigor mortis present ; ratio of head to body, and cranium to face, apparently normal. Skull ant. post., 194 ; transv., 146 ;

calvaria thin, one point over the longitudinal sinus not much thicker than paper; dura adherent to skull, everywhere thickened and opaque; internal surface not remarkable; meshes of pia contained considerable clear fluid; pia thickened and opaque along the course of the vessels, and contained considerable dark blood; brain nearly filled the cavity of the skull, and weighed 1,170 gm. Vessels at the base and in the fissure of Sylvius contained numerous opaque, yellow patches; lumen in some places enlarged, and apparently nowhere decreased. Lateral ventricles contained each about 10 c.c. of clear fluid; ventricular cavities twice the usual size; ependyma coarsely granular; choroid plexuses and velum interpositum contained a moderate amount of blood; brain substance, in general, quite firm; cortex of the usual thickness, except in the convolutions just posterior to the fissure of Rolando and the ascending parietal, where they were one-third thinner than usual; color good; white matter dry; puncta cruenta usual size and number; section of the basal ganglia showed them to be of a purple tint, especially marked in the corpus striatum; section of the medulla, pons, and cerebellum showed nothing of special note; pia everywhere readily separable from brain substance; diaphragm on the right, at the fourth rib; on the left, at the fourth intercostal space; pericardium contained about 15 c.c. of clear fluid; surfaces smooth and shining; heart uniformly enlarged in size about one-third; left ventricle contracted and empty; right ventricle and auricles distended, with coagulated blood; aortic and pul. valves sufficient; mitral admitted the tips of three, and the tricuspid the tips of four, fingers; valves and cavities not remarkable; walls of left ventricle one-third thicker than usual; muscular substance in general of good color, with here and there opaque grayish patches; coronary arteries at points of origin much diminished in lumina, remaining portions showing numerous opaque yellow patches; lumen free. Pleural surfaces left, free from adhesions; right, adherent over upper lobe by readily torn adhesions; lungs only partly retracted, dense, firm; over posterior parts of right lung, and over lower portions of left, of a dark red-blue color. Dense portions on section showed either a red-gray or dark-gray surface, somewhat granular, with numerous isolated nodules yielding, on pressure, small drops of puriform fluid. Bronchial mucous membrane deeply

reddened and injected, and covered with puriform fluid; spleen not remarkable; kidneys both reduced one-third in size, pale red color; density much increased; capsules detached with some difficulty, leaving beneath a granular surface. On section, cortex reduced one-half in thickness, of an uniform reddish-gray color, somewhat translucent in appearance. Bladder distended with urine; œsophagus, stomach, and intestines not remarkable. Aorta showed in intima a few opaque yellow patches; right common iliac was dilated, so as to form an ovoid sack, measuring, when flattened, about 5 c.m. in length, by 3 c.m. in breadth; left common iliac presented a markedly serpentine course.

Diagnosis.

Chronic pachymeningitis.

Chronic leptomeningitis.

Œdema of pia.

Limited atrophy of cortex.

Chronic endarteritis of basal vessels.

Chronic ependymitis.

Hypertrophy of heart, without valvular disease.

Chronic circumscribed myocarditis.

Endarteritis of coronary arteries.

Acute fibrinous pleurisy.

Acute bronchitis.

Acute broncho-pneumonia.

Chronic vesicular emphysema.

Chronic interstitial nephritis.

Aneurism of right common iliac artery.

Serpentine aneurism of left common iliac artery.

No. XII.

CASE OF EPILEPSY.

Autopsy twenty-four and a half hours after death. Body, medium size, well developed, fairly well nourished; marked lividity of dependent portions; rigor mortis present; ant.-post diam. skull, 187, trans., 135; extensive ecchymoses in pericranium over frontal

bone ; calvaria varied in thickness from 8 to 12 m.m. ; usual ratio of diploë to tables ; dura everywhere translucent ; inner surface, both over convexities and base, showed numerous red, adherent films, also in their neighborhood a few small blood-clots lying between the dura and pia ; sinuses contained each a moderate amount of partly coagulated blood ; meshes of pia contained a moderate amount of clear fluid ; veins contained a moderate amount of blood ; brain nearly filled the cavity of the skull, and weighed 1,325 gm. ; vessels at base, and in the fissure of Sylvius, thin and delicate ; lateral ventricles contained each about 20 c.c. of clear fluid ; ventricles about one-third larger than usual ; ependyma of the posterior horn of the left lateral ventricle somewhat thickened and slightly granular ; fourth ventricle showed nothing remarkable ; brain substance, in general, quite firm ; gray matter throughout of usual thickness and of a reddish-gray color, except in anterior regions, where it had a slightly purple tint ; puncta cruenta well marked and abundant ; section of basal ganglia, pons, medulla, and cerebellum showed nothing of note ; pia everywhere readily separable from brain substance ; diaphragm at fourth intercostal space on the right, fourth rib on the left ; pericardium contained about 10 c.c. of clear fluid ; right ventricle somewhat flaccid, contained no blood ; auricles contained a moderate amount of blood ; left ventricle contracted and empty ; rest of heart showed nothing of special note ; pleural surfaces free from adhesions ; pleural cavities empty ; lungs only partly retracted ; lower lobes of both lungs throughout and posterior half of upper right lobe were non-retracted and non-crepitant, of a dark bluish color, and showed on section a velvety, uniform, dark bluish surface, with here and there grayish granular nodules, varying in size from a pea to a filbert ; bronchial mucous membrane of both lungs in lower portions reddened and injected, with here and there puriform fluid ; spleen not remarkable ; kidneys of usual size, color, and density ; capsules detached with some difficulty, leaving a granular surface beneath, also a few small cysts beneath capsule, otherwise not remarkable ; bladder not unusual ; urethral orifice of a dark reddish-blue color, showing a slight loss of substance ; vagina covered with a thick, opaque, yellow, foul-smelling material, mucous membrane beneath thickened and velvety ; uterus enlarged by the presence of numerous dense nodules, varying in size from a large

pea to a horse-chestnut, one in the sub-mucous tissue sessile 6 m.m. square; mucuous membrane thickened, injected, velvety; ovaries atrophied; œsophagus, stomach, and intestines showed nothing remarkable; liver also not remarkable.

Diagnosis.

Chronic internal hemorrhagic pachymeningitis, with hemorrhage into the space between the dura and pia.

Slight œdema of the pia.

Slight ependymitis.

Acute broncho-pneumonia.

Fibro-myomata of uterus.

Chronic vaginitis.

Erosion of mucous membrane of meatus.

Microscopic Examination of Brain.

Pia slightly thickened from increase of connective-tissue fibres.

Cortex: First layer showed a finely fibrous mesh, well-marked in the outer portion of first layer with a few spider-cells.

No changes in the vessels observed in any portion of the brain.

No. XIII.

CASE OF SECONDARY DEMENTIA.

Autopsy nineteen hours after death.

Body large, well developed, well nourished; lividity of dependent portions; rigor mortis present.

Skull, antero-posterior diameter, 180 c.m.; transverse, 140 c.m. The inner surface of the calvaria on the right frontal bone near the median line, anteriorly to the coronal suture, showed an elevated patch, 2 c.m. square, and two rounded elevations a little smaller than two dried peas.

Dura everywhere translucent.

Sinuses contain dark, soft coagula.

Pia thin and delicate; meshes contain a small amount of clear fluid.

Brain filled the cavity of the skull; weight, 1,420 grams.

Walls of the vessels at the base and in the fissure of Sylvius everywhere thin; vessels not remarkable. Brain substance, in general, quite firm. Cortex of usual thickness, and of a pale, reddish-gray color. White substance firm; puncta cruenta well marked. Section of basal ganglia, pons, medulla, and cerebellum showed nothing worthy of note.

Pia everywhere readily separable from the brain substance.

Diaphragm on the right extended to the fourth rib, on the left to the fourth intercostal space.

Pericardium contained about 50 c.c. of clear fluid; well-marked milk-spot on the anterior surface.

Heart of usual size. Left ventricle contracted and empty; both auricles and right ventricle distended with firm, fibrinous coagula and a small amount of dark fluid blood. The mitral valve admitted the tips of three fingers, the tricuspid the tips of four. The valves, cavities, and muscular substance showed nothing remarkable.

The transverse and descending portions of the arch of the aorta were occupied by a sac of the size of a large closed fist, with thin walls, the inner surface lined with laminated thrombi about 5 m.m. thick. The anterior surface was adherent to the first segment of the sternum, the bone beneath having a spongy appearance. No evidence of pressure on the œsophagus or trachea.

Pleuræ, on the left, adherent throughout by old and firm adhesions; on the right, adherent over the apex.

Lungs, both partly retracted, red in color, density much increased, although everywhere slight crepitation could be felt. On section, the left lung showed, at the apex, a firm, fibrous nodule about the size of a filbert; the lower portion of the lower lobe was dense, firm, and inelastic, with numerous slaty-gray lines following the course of the vessels; the surface, generally, was slightly moist, and yielded, on pressure, a moderate amount of aërated fluid. The right lung presented the same features as regards density and crepitation, but was darker in color, and showed, on section, a moist surface, yielding, on pressure, a large amount of aërated fluid.

The trachea and large and medium-sized bronchi contained a large amount of muco-purulent fluid. The mucous membrane was

injected and reddened. Many smaller bronchi, 2-3 m.m. in diameter, showed, on section, the presence of the same material.

Spleen slightly enlarged, of the usual color and density. Capsule thickened and opaque in patches. On section, follicles and trabeculae distinct, pulp slightly increased in amount and quite firm.

Kidneys of usual size, increased density, and of a dark bluish color. On section, the cut surface presented a uniform dark reddish-blue surface, in which no distinction between the various regions could be made out.

Bladder not remarkable.

Oesophagus, stomach, and intestines not unusual except for a hæmorrhagic erosions in the stomach.

Liver of usual size and density, color a dark reddish-blue. On section, the cut surface was also of a dark reddish-blue.

Aorta showed throughout numerous opaque yellow, elevated patches.

Diagnosis.

Internal exostosis of the skull.

Chronic adhesive pleurisy.

Circumscribed chronic interstitial pneumonia.

Œdema of the lungs.

Acute bronchitis.

Chronic peripleuritis.

Kidney of chronic passive congestion.

Liver of passive congestion.

Aneurism of the aorta.

Partial erosion of the sternum.

The microscopic examination of the brain failed to show any variation from the normal.

No. XIV.

CASE OF TUMOR OF THE BRAIN.

Autopsy sixteen hours after death. Showed body small and poorly developed, and somewhat emaciated; rigor mortis present;

skull measured antero-posteriorly 177 m.m., transversely, 139 m.m.; calvaria measured in thickness $1\frac{1}{2}$ m.m., except along the longitudinal sinus where it was 5 m.m.; inner portion of the skull showed an irregular surface of a dark purple color, the inner table being everywhere absorbed and diploë exposed; longitudinal sinus contained a small amount of partly coagulated blood; external surface of dura mater showed marked vascularity and a somewhat ragged surface; inner, nothing unusual. Brain completely filled the cavity of the skull, with flattened convolutions and obliterated sulci, as if it had been subjected to great pressure from within; it weighed 1,605 gm.; pia mater pale and dry. Vessels showed nothing remarkable; the lateral ventricles contained each, by estimate, 75 c.c. clear fluid; ependyma everywhere smooth and shining; choroid plexuses pale; the region of the corpora quadrigemina and the pineal gland was occupied by a globular, soft, reddish-gray mass, measuring nearly 3 c.m. in its longest dimensions; it extended to, but apparently did not involve, the corpora geniculata; over it lay the velum interpositum and the venæ galeni, much stretched. On section the tumor showed the same reddish-gray basis-substance with numerous red specks and streaks, evidently blood-vessels. To the left of the middle sagittal line of the tumor were three or four pearly-white bodies, varying in size from a large pin's head to a filbert-meat, showing a concentric, laminated structure. No trace of the pineal gland or anterior corpora quadrigemina could be made out. Of the posterior corpora quadrigemina only a layer about 2 m.m. thick remained on the posterior surface of the tumor. The fourth ventricle showed nothing remarkable; the brain substance was, in general, firm; cortex of the usual thickness and of good color; white substance normal; section of the basal ganglia, pons, medulla, and cerebellum showed nothing of note, except that a nipple of the latter had been forced down into the cavity of the cord; between the periosteum of the canal and the dura, extending from the foramen magnum along the cervical cord, was a considerable quantity of dark, firmly coagulated adherent clot; otherwise, the cord and membranes were normal. Diaphragm reached the third intercostal space on the right and fourth on the left; pericardium contained fluid enough to moisten the surfaces.

Heart small; right ventricle and auricle distended with dark fluid blood; left ventricle contracted and empty; aortic and pulmonary valves sufficient; mitral admitted tips of three fingers, the tricuspid of four; heart substance normal.

Lungs, no adhesions; left lung partially retracted, pale, and crepitant; upper lobe dark in color; over lower lobe numerous nodules, the size of peas; on section these were gray and granular; bronchial mucous membrane reddened and injected, and covered with bloody mucus; pleural surface of right lower lobe covered with a layer of thin, fibrinous false membrane; lobe non-retracting and non-crepitant; section showed a reddish-gray granular surface, with lobular divisions well-marked; bronchial mucous membrane as in left lung.

Spleen, kidneys, and liver small, but normal; intestines normal, with tarry contents; aorta thin and elastic.

Diagnosis.

Diffuse atrophy of skull.

Chronic internal hydrocephalus.

Tumor (vascular sarcoma) of velum interpositum.

Hæmorrhage into space between dura mater and periosteum of vertebral canal.

Acute fibrinous pleurisy.

Acute broncho-pneumonia.

Hypoplastic aorta.

Microscopic examination of the tumor showed varying appearances. In parts it was made up wholly of very numerous small round cells, imbedded in a delicate connective-tissue mesh, and abundantly supplied with blood-vessels. Other parts showed a distinct alveolar structure, the spaces being filled with nests of medium-sized, irregular, rather plump cells. In patches these cells were seen lying flattened against one another in clumps. The pearly nodules were made up of pale, glistening, thin, homogeneous scales concentrically arranged.

Diagnosis of tumor: Vascular sarcoma, with cholesteatomatous portions, growing probably from the velum interpositum.

Microscopic examination of brain and cord: Nothing abnormal

was observed in the brain beyond the fact that the vessels contained rather more blood and that the perivascular spaces were wider than usual.

Cord; cervical region: The perivascular spaces wide; were filled with a finely-granular material, an appearance characteristic of albumenoid fluids when acted on by a hardening agent.

Dorsal region: Marked dilatation of the central canal, the epithelial lining intact. The perivascular spaces widely distended and filled with a similar finely-granular material.

Lumbar region: Sections showed appearances similar to those seen in the dorsal region.

